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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/761,515	01/20/2004	Anthony-Joseph DiMaio	0122-PA-DIV-1	4232

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CROMPTON CORPORATION

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EXAMINER

CHOI, LING SIU

ART UNIT

PAPER NUMBER

1713

DATE MAILED: 04/07/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/761,515

Applicant(s)

DIMAIO, ANTHONY-JOSEPH

Examiner

Ling-Siu Choi

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1713

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) 11-14 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1/20/04, 2/24/04.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

1. This Application is a Division of US Application Serial Number 10/163,132 filed June 4, 2002, now US 6,706,828.

Election/Restriction

2. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claimss 1-10, drawn to a substantially amorphous poly(α -olefin), classified in class 526, subclass 160.
 - II. Claims 11-14, drawn to a method to improve an viscosity index of a lubricant composition, classified in class 526, subclass 59.
3. The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as product and process of use. The inventions can be shown to be distinct if either or both of the following can be shown: (1) the process for using the product as claimed can be practiced with another materially different product or (2) the product as claimed can be used in a materially different process of using that product (MPEP ' 806.05(h)). In the instant case the product as claimed can be used in a materially different process of using that product such as a process to use the poly(α -olefin) as a molding material .

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4. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.

5. During a telephone conversation with Mr. Daniel Reitenbach on March 9, 2006, a provisional election was made with traverse to prosecute the invention of Group I, claims 1-10. Affirmation of this election must be made by applicant in replying to this Office action. Claims 11-14 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

6. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Claim Analysis

7. Summary of claim 1:

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A substantially amorphous poly(α -olefin) possessing	
M_w	about 500-about 50,000
M_w/M_n	about 1.0-about 10
Kv_{100}	about 10-about 10,000
iodine number	about 0.0-about 10
T_g	< about -60°C
<p>the poly(α-olefin) being prepared by a process comprising polymerizing at least one α-olefin in the presence of hydrogen and a catalyst which is obtained by combining a metallocene catalyst and a cocatalyst, wherein the metallocene catalyst comprises at least one meso compound in the general formula:</p> <div style="text-align: center;"> </div> <p>wherein A^1 and A^2 are independently selected from the group consisting of mononuclear and polynuclear hydrocarbons</p>	

Claim Rejections - 35 USC § 102/103

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --
 (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 1-10 are rejected under 35 U.S.C. 102 (b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Grumel et al. [Macromol. Mater. Eng. 286, 480-487(2001)].

The present claims are drawn to a product-by-process claims. The case law held that "The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process." *In re Thorpe*, 777 F.2d 695, 698, 227 USPQ 964, 966(Fed. Cir. 1985). Thus, limitations relate to the process steps will not carry a patentable weight.

Grumel et al. disclose a poly(decene) obtained in the presence of a catalyst system comprising isospecific $\text{Et}(\text{Ind})_2\text{ZrCl}_2$ and MAO, wherein the poly(decene) has M_n (GPC) of 3200 and M_w of 7600 and M_w/M_n of 2.36 (col 1 of page 481; Table 1-Entry 13; col. 2 of page 482). It is noted that the resulting poly(decene) is isotactic. However, Grumel et al. further disclose that the isotacticity decreases with increasing the concentration of $\text{Et}(\text{Ind})_2\text{ZrCl}_2$ (page 484; col. 1 of page 485). Attention is drawn to Table 2, wherein at a conditions of 1-decene/MAO/ $\text{Et}(\text{Ind})_2\text{ZrCl}_2$ being 30,000/1,000/1, [mmmm] is 52 and [mmmm/mmmr] is 67. Thus, the resulting poly(decene) can be

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atactic. With respect to M_w and M_w/M_n , polymer obtained by Grumel et al., is substantial identical to the present claimed polymer. Thus, the polymer would possess other claimed properties. Since the PTO does not have proper means to conduct experiments, the burden of proof is now shifted to applicants to show otherwise. *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977); *In re Fitzgerald*, 205 USPQ 594 (CCPA 1980).

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Winter et al. (US 5,672,668) and Ewen [J. Am. Chem. Soc., **106**, 6355-6364 (1984)].

Winter et al. disclose an olefin polymer obtained in the presence of a catalyst comprising a transition-metal compound and a cocatalyst, wherein the transition-metal compound is a metallocene in the meso-form or meso-rac mixture; the cocatalyst is aluminoxane; the α -olefin is $R_a\text{-CH=CH-R}_b$ with R_a and R_b being identical or different and being a hydrogen atom or a hydrocarbon radical having 1 to 14 carbon atoms (claims 1 and 4). Winter et al. further disclose the polyolefin is atactic and $M_w > 1000,000$ g/mol (col. 1, lines 49-52). Thus, Winter et al do not teach or fairly suggest a substantially amorphous poly(α -olefin) having M_w between about 500 to about 50,000.

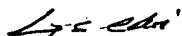
Ewen discloses an atactic polypropylene obtained in the presence of a catalyst system comprising meso-Et [ind]₂TiCl₂ or meso-Et [ind]₂ZrCl₂ and methylalumoxane

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(abstract; col. 1 of page 6358). Ewen further disclose that the atactic polypropylene has number average molecular weight (M_n) of 9.66×10^4 and **weight average molecular weight (M_w) of 1.54×10^5** , which lead to $M_w/M_n = 1.59$ (Table VII). Thus, Ewen does not teach or fairly suggest a substantially amorphous poly(α -olefin) having M_w between about 500 to about 50,000.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ling-Siu Choi whose telephone number is 571-272-1098.

If attempt to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reach on 571-272-1114.



LING-SUI CHOI
PRIMARY EXAMINER

March 15, 2006